REMARKS

Claims 1-4, 8-13 and 20 are pending in the application. Claims 1 and 4 are currently amended. Claims 14-19 and 21-34 have been previously withdrawn without prejudice. Claims 5-7 have been previously cancelled.

Claim Rejections – 35 U.S.C. §101

To properly determine whether a claimed invention complies with the statutory invention requirements of 35 U.S.C. § 101, the Office must first identify whether the claim falls within at least one of the four enumerated categories of patentable subject matter recited in section 101 (process, machine, manufacture or composition of matter). MPEP §2106 IV(B). The present claims are directed to a method and/or a process for predicting the soybean cyst nematode resistance of a soybean sample. Applicant respectfully submits that these claims fall within the useful process category within the meaning of 35 U.S.C. § 101. "[I]f the examiner determines that it is more likely than not that the claimed subject matter falls outside all of the statutory categories, the examiner must provide an explanation." Id. Applicant respectfully requests that the Examiner explain why the present claims fall outside of all the statutory categories.

Applicant recognizes that determining whether the claim falls within one of the four enumerated categories of patentable subject matter recited in 35 U.S.C. § 101 (process, machine, manufacture or composition of matter) does not end the analysis. Claims directed to nothing more than abstract ideas (such as mathematical algorithms), natural phenomena, and laws of nature are not eligible and therefore are excluded from patent protection. Here again, the initial burden is for the examiner to weigh all the determinations to reach a conclusion as to whether it is more likely than not that the claimed invention as a whole falls within one of the exceptions to statutory subject matter. The Examiner again fails to explain why the claims fall within one of the judicial exceptions, namely, an abstract idea, natural phenomenon, or law of nature. Indeed, the instant claims recite steps of performing a particular process and therefore are not directed to an abstract idea within the meaning of 35 U.S.C. § 101.

The Examiner misapplies the law by going into the analysis of whether The claimed invention "transforms" an article or physical object to a different state or thing or

whether the claimed invention otherwise produces a useful, concrete and tangible result. This analysis is misplaced because such an analysis is only necessary after it has been first determined that the claimed invention falls within one of the judicial exceptions, namely, an abstract idea, natural phenomenon, or law of nature. Because the Examiner has not established that the instant claims are either an abstract idea, a natural phenomenon, or a law of nature, the analysis of whether the invention produces useful, concrete and tangible results is not called for and is irrelevant. For the foregoing reasons, Applicant respectfully requests that the Examiner withdraw the rejection under 35 U.S.C. § 101.

Claim Rejections – 35 U.S.C. §112 Second Paragraph

Claims 1-4 and 8-10 stand rejected under 35 U.S.C. §112 Second Paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1 and 4 have been amended to clarify the subject matter of the claims. Withdrawal of the rejection is respectfully requested.

Claim Rejections – 35 U.S.C. §103

Claims 1-4, 8, 10-13, and 20 stand rejected under 35 U.S.C. §103(a) as being obvious over Qiu et al. (Theor. Appl. Genet (1999) 98: 356-64), in view of Robinson et al. (Revue Nematol., 1988, vol. 11, No. 1, p99-107) and Bewig et al. (JAOCS, 1998, Vol. 71, No. 2, p195-200).

Applicant respectfully disagrees with the Examiner's position that Claims 1-4, 8, 10-13, and 20 are rendered obvious by Qiu et al. in view of Robinson et al. and Bewig et al. because the combination of references fails to teach or suggest every limitation of the present claims. "To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA, 1974). Neither Qiu et al. nor Robinson et al., nor Bewig et al. teaches or suggests the claim limitation wherein the assay spectra obtained from a soybean sample are compared with a predictive model based on spectra data obtained from soybean varieties with known resistance or susceptibility to soybean cyst nematode

(SCN) to predict the SCN resistance or susceptibility of the soybean sample based upon the comparison results.

Qiu et al. disclose using NIR methods to measure seed composition in soybean. Qiu et al. also attempt to find RFLP markers associated with both SCN resistance and seed composition, but fail to identify such common markers definitively. In the instant office action, the Examiner acknowledged that Qiu et al. do not specifically teach using spectra data obtained from soybean samples to predict SCN susceptibility of the soybean samples. See Page 6 of the Office Action dated May 1, 2007.

The Examiner cites the Abstract of Robinson et al. as teaching the use of fluorescent microscopy for characterization of hypersensitive reactions in susceptible and resistance potato cyst nematodes. The Examiner further states that Robinson et al. teach obtaining spectroscopic scans and comparing quantified fluorescence among host-parasite combination to determine resistance. The Examiner appears to rely on Robinson et al. to teach a method wherein spectroscopic data may be used to predict nematode susceptibility. However, Robinson et al. do not teach using spectroscopic data obtained from plant species of known susceptibility to predict the susceptibility of unknown species.

Applicant has carefully reviewed Robinson et al. and has found no teaching of a predictive methodology similar to the one that is presently claimed. Robinson et al. teach a correlation between the extent of fluorescence along the track and the distance the nematodes traveled within the roots. See last paragraph of the left column, page 104 of Robinson et al. Although Robinson et al. do discuss the possibility that the accumulation of fluorochromes may change the behavior of an invading nematode, Robinson et al. fall short of teaching how the possible change in nematode behavior affect the resistance of the plant and how one may use spectroscopic data to predict nematode susceptibility. Indeed, the potential application of the methodology taught by Robinson et al. is inherently limited by its reliance on measuring a past injury caused by nematode infection. One can not measure an injury before an injury actually occurs, and thus the methodology of Robinson et al. is not applicable in predicting susceptibility to nematodes. More importantly, Robinson et al. teach how to reconstruct the history of

past invasion by nematodes, but are not concerned with predicting how susceptible a plant is to nematodes. To quantify a past injury caused by nematode infection is different from predicting whether a particular plant may be susceptible to nematodes. Thus, Robinson et al. do not teach a methodology of using spectroscopic data to predict the nematode susceptibility of a plant species.

Bewig et al. teach NIR spectroscopy to differentiate and classify different vegetable oil types. Bewig et al. do not teach any correlation between NIR spectroscopic readings and susceptibility to nematodes and therefore do not supply the missing link between the cited references and the instant claims. Thus, none of the cited references, taken together, teach or suggest the correlation between the NIR spectra and SCN susceptibility.

Even if we assume, arguendo, that every limitation of the rejected claims is present in the cited art, there is no teaching or suggestion in the cited references to combine the teachings, and the Examiner has not established that one of ordinary skills in the art would be motivated to combine or modify the separate teachings in these three references to arrive at the invention as presently claimed. Therefore, taken as a whole, Claims 1-4, 8, 10-13, and 20 are not rendered obvious by Qiu et al. in view of Robinson et al. and Bewig et al., and withdrawal of the rejection is respectfully requested.

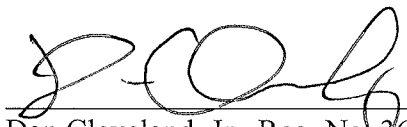
Claims 1-4, 8-13, and 20 stand rejected under 35 U.S.C. §103(a) as being obvious over Qiu et al. (Theor. Appl. Genet (1999) 98: 356-64), in view of Robinson et al. (Revue Nematol., 1988, vol. 11, No. 1, p99-107) and Bewig et al. (JAOCS, 1998, Vol. 71, No. 2, p195-200) as applied to Claims 1-4, 8, 10-13, and 20, and further in view of Borggaard et al. (Anal. Chem. 1992, 64:545-51). Applicant disagrees with Examiner for reasons discussed in the previous section as well as reasons presented in the following text.

As discussed above, there is no teaching in Qiu et al., Robinson et al. or Bewig et al. that NIR spectra obtained from a species of unknown susceptibility can be compared with a predictive model to predict SCN susceptibility of that species. The addition of Borggaard et al. does not cure this deficiency because Borggaard et al. do not teach comparing NIR spectra with a predictive model to predict SCN resistance or

susceptibility. Therefore, because not every limitation of the rejected claims is described or suggested in the cited references, the Examiner has not established a *prima facie* case of obviousness. Withdrawal of the obviousness rejections is respectfully requested.

For the foregoing reasons, Applicant's attorney respectfully solicits a Notice of Allowance. Applicant submits herewith a Petition for Extension of Time with associated fees. However, if any additional fees are deemed necessary in connection with this filing, the Commissioner is hereby authorized to charge deposit account No. 12-0600.

Respectfully submitted



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